ABSTRACT OF THE DISCLOSURE

Various embodiments of MEMS flow modules that both filter and regulate pressure are disclosed. One such MEMS flow module (58) has a tuning element (78) and a lower plate (70). A plurality of springs or spring-like structures (82) interconnect the tuning element (78) with the lower plate (70) in a manner that allows the tuning element (78) to move either toward or away from the lower plate (70), depending upon the pressure being exerted on the tuning element (78) by a flow through a lower flow port (74) on the lower plate (70). The tuning element (78) is disposed over this lower flow port (74) to induce a flow through the MEMS flow module (58) along a non-linear (geometrically) flow path. Preferably, a relatively small change in the pressure exerted by this flow on the tuning element (78) produces greater than a linear change in the flow rate out of the MEMS flow module (58).